

ABSTRACT OF THE DISCLOSURE

A method for controlling injection rate and injection pressure of an electromagnetic fuel injector assembly having a pressure balanced control valve including a solenoid and a valve member subject to the pressure developed by the injector and actuated by the solenoid to close the valve member against the biasing force of a spring. The control valve is supported in a valve bore in an injector body. The method includes the step of providing a first level of current to the solenoid for moving the valve member from an open to a closed position allowing the pressure in the injector to rise, providing a regulated current to the solenoid at preselected times during the injector event to unbalance the forces acting on the valve member thereby slightly unseating the valve member to regulate injection pressure and injection rate of the fuel injector, and ending solenoid current delivery thereby moving the valve member to its open position.